

# **ABSTRACT**

## **“A PROSPECTIVE AND COMPARITIVE STUDY ON EMERGENCY LAPAROTOMY PATHWAY QUALITY IMPROVEMENT CARE BUNDLE IN REDUCING MORTALITY**

Emergency laparotomy is the little studied area of a surgical practice. The results of recent international audits and report by royal college of surgeons of England throws light on standard of care delivered to patients admitted for emergency laparotomy.

The first report by the National Emergency Laparotomy Audit (NELA) was published in 2015 .A significant proportion of patients with overt sepsis still do not receive timely antibiotics within one hour of identification of sepsis. Access to emergency theatres is patchy,especially for patients deemed to be category 2a (urgent: surgery within 2 to 6 hours). Fluid resuscitation is carried out in an unscientific way and intensive care unit admission is inconsistent.Consultant (both anaesthetic and surgical) involvement at night and weekends remains poor.

The ELN report also highlighted wide variation in, and poor delivery of a number of key process indicators that are supported in evidence-

- 1) All emergency admissions have an early warning score assessed on presentation,graded escalation policies for senior clinical and intensive care unit referral(NICE clinical guidelines)

- 2) Broad spectrum antibiotics to be given to all patients with suspicion of peritoneal soiling or with a diagnosis of sepsis ( Surviving Sepsis Campaign)
- 3) Once a decision has been made to carry out laparotomy the patient takes the next available place in the emergency theatre (or within 6 hours of decision being made)
- 4) Start resuscitation using goal directed techniques as soon as possible or within 6 hours of admission(NICE recommendation and others)
- 5) Admit all patients in ICU after emergency laparotomy.

To compare risk adjusted 30 day mortality after emergency laparotomy before and after implementation of ELPQuiC bundle (Emergency Laparotomy Pathway Quality Improvement Care Bundle project )

## **METHODS:**

The data set and definitions were agreed before start of the study. Baseline data before the implementation of ELPQuiC for minimum of 3 months collected. The ELPQuiC bundle was introduced and data were collected over 5 months.

The predicted mortality was estimated for each patient using Portsmouth modification of Physiological and Operative Severity Score for the enUmeration of Mortality and Morbidity (P-POSSUM). Data collected included demographics and compliance with bundle elements. The primary outcome was P-POSSUM risk adjusted 30 day mortality.

Cumulative sum(CUSUM) plots were used to show cumulative differences between expected risk of death (by P-POSSUM score) and observed outcome

Increasing CUSUM-Saving of lives; Decreasing CUSUM-loss of lives; Stable CUSUM-neutral

## **RESULTS**

The overall crude mortality rate decreased from 28.2% to 18.4%. The reduction in percentage of mortality 34.75%. Mortality outcomes were adjusted for individual patients predicted risk of 30 day mortality. Expected minus observed CUSUM chart showed significant increase in lives saved per 100 patients treated after introduction of ELPQuiC care bundle.

## **CONCLUSION**

The use of ELPQuiC bundle was associated with a significant reduction in the risk of death following emergency laparotomy.